

We claim:

1 1. For a call center having a pool of agents assigned to an inbound state and a pool of agents
2 assigned to an outbound state, a method of optimizing a size of a pool of agents assigned to a
3 preferred state, where said preferred state is one of said inbound state and said outbound
4 state, said method comprising:

5 receiving call information from said call center;

6 optimizing, based on said received information, said size of said pool of agents
7 assigned to said preferred state;

8 determining, based on said optimizing, a change in said size of said pool of agents
9 assigned to said preferred state; and

10 communicating said change to said call center.

1 2. The method of claim 1 further comprising:

2 receiving agent activity information; and

3 if said change indicates an increase in said size of said pool of agents assigned to said
4 preferred state, reassigning a number of idle ones of said agents assigned to the other
5 state to said preferred state, where said number is equivalent to a magnitude of said
6 change.

1 3. The method of claim 1 further comprising:

2 receiving agent activity information; and

3 if said change indicates a decrease in said size of said pool of agents assigned to said
4 preferred state, reassigning a number of idle ones of said agents assigned to said
5 preferred state to the other state, where said number is equivalent to a magnitude of
6 said change.

1 4. The method of claim 3 wherein said reassigning comprises, for a particular idle one of
2 said agents assigned to said inbound state:

3 determining a frequency of state reassignment; and

4 reassigning only if said frequency is less than a threshold.

1 5. The method of claim 1 wherein said preferred state is said inbound state.

1 6. The method of claim 5 wherein said received information includes a call rate.

1 7. The method of claim 6 wherein said received information includes a grade of service
2 specification.

1 8. The method of claim 7 wherein said grade of service comprises a probability that an
2 inbound call will be in a queue for a time longer than a specified time period.

1 9. The method of claim 8 wherein said received information includes an average call
2 duration.

1 10. The method of claim 9 wherein said optimizing comprises determining a smallest positive
2 integer number of agents assigned to said inbound state for which an Erlang C probability,
3 determined given said specified time period, said average call duration and said call rate, is
4 equal to or exceeded by said grade of service probability.

1 11. The method of claim 1 where said communicating is performed once a pre-determined
2 time period and said method further comprises adjusting a length of said pre-determined time
3 period based on a rate of change of said received information.

1 12. The method of claim 1 where said optimizing comprises determining a theoretical size of
2 said pool of agents assigned to said preferred state to meet a required grade of service.

1 13. The method of claim 12 wherein said received information includes a sampled grade of
2 service and said optimizing further comprises adjusting said theoretical size of said pool of
3 agents assigned to said preferred state based on a difference between said sampled grade of
4 service and said required grade of service.

1 14. A method of initializing a call center comprising:

2 determining a maximum size of a pool of agents to be assigned to an inbound state
3 given a maximum expected call rate;

communicating said maximum size of a pool of agents to be assigned to an inbound state to said call center;

receiving call information from said call center;

optimizing, based on said received information, an initial size of said pool of agents assigned to said inbound state; and

communicating said initial size of said pool of agents assigned to said inbound state to said call center.

15. The method of claim 14 further comprising:

determining, based on said initial size of said pool of agents assigned to said inbound state and said maximum size of said pool of agents to be assigned to said inbound state, an initial size of a pool of agents assigned to an outbound state; and

communicating said initial size of a pool of agents assigned to an outbound state to said call center.

16. The method of claim 14 further comprising inflating said maximum expected call rate to allow said call center to meet a grade of service specification in the event of an instantaneous call rate exceeding said maximum expected call rate.

17. An agent assignment server comprising:

means for receiving call information from a call center;

processor means for optimizing, based on said received information, a size of a pool of agents assigned to a preferred state;

processor means for determining, based on said optimizing, a change in said size of said pool of agents assigned to said preferred state; and

means for communicating said change to said call center.

18. An agent assignment server comprising:

a receiver for receiving call information from a call center;

3 a processor operable to:

4 optimize, based on said received information, a size of a pool of agents
5 assigned to a preferred state;

6 determine, based on said optimizing, a change in said size of said pool of
7 agents assigned to said preferred state; and

8 a network interface for communicating said change to said call center.

1 19. An agent assignment server operable to:

2 receive call information from a call center;

3 optimize, based on said received information, a size of a pool of agents assigned to a
4 preferred state;

5 determine, based on said optimizing, a change in said size of said pool of agents
6 assigned to said preferred state; and

7 communicate said change to said call center.

1 20. A computer readable medium for providing program control to an agent assignment
2 processor, said computer readable medium adapting said processor to be operable to:

3 receive call information from a call center;

4 optimize, based on said received information, a size of a pool of agents assigned to a
5 preferred state;

6 determine, based on said optimizing, a change in said size of said pool of agents
7 assigned to said preferred state; and

8 communicate said change to said call center.